

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY (Chapter I of the Patent Cooperation Treaty)

(PCT Rule 44bis)

Applicant's or agent's file reference 165WOa-1	FOR FURTHER ACTION		See item 4 below
International application No. PCT/JP2005/005393	International filing date (day/month/year) 24 March 2005 (24.03.2005)	Priority date (day/month/year) 24 March 2004 (24.03.2004)	
International Patent Classification (8th edition unless older edition indicated) See relevant information in Form PCT/ISA/237			
Applicant DAINIPPON SUMITOMO PHARMA CO., LTD.			

1.	This international preliminary report on patentability (Chapter I) is issued by the International Bureau on behalf of the International Searching Authority under Rule 44 bis.1(a).		
2.	This REPORT consists of a total of 6 sheets, including this cover sheet. In the attached sheets, any reference to the written opinion of the International Searching Authority should be read as a reference to the international preliminary report on patentability (Chapter I) instead.		
3.	This report contains indications relating to the following items:		
	<input checked="" type="checkbox"/> Box No. I	Basis of the report	
	<input type="checkbox"/> Box No. II	Priority	
	<input type="checkbox"/> Box No. III	Non-establishment of opinion with regard to novelty, inventive step and industrial applicability	
	<input checked="" type="checkbox"/> Box No. IV	Lack of unity of invention	
	<input checked="" type="checkbox"/> Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement	
	<input type="checkbox"/> Box No. VI	Certain documents cited	
	<input type="checkbox"/> Box No. VII	Certain defects in the international application	
	<input type="checkbox"/> Box No. VIII	Certain observations on the international application	
4.	The International Bureau will communicate this report to designated Offices in accordance with Rules 44bis.3(c) and 93bis.1 but not, except where the applicant makes an express request under Article 23(2), before the expiration of 30 months from the priority date (Rule 44bis .2).		

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland Facsimile No. +41 22 338 82 70	Date of issuance of this report 18 October 2006 (18.10.2006)
	Authorized officer Masashi Honda e-mail: pt08@wipo.int

PATENT COOPERATION TREATY

TRANSLATION

From the
INTERNATIONAL SEARCHING AUTHORITY

PCT

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

To:

Date of mailing
(day/month/year)

Applicant's or agent's file reference

165WOa-1

FOR FURTHER ACTION

See paragraph 2 below

International application No.

PCT/JP2005/005393

International filing date (day/month/year)

24.03.2005

Priority date (day/month/year)

24.03.2004

International Patent Classification (IPC) or both national classification and IPC

Applicant

DAINIPPON SUMITOMO PHARMA CO., LTD.

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☒ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

2. **FURTHER ACTION**

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA/JP

Authorized officer

Facsimile No.

Telephone No.

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/JP2005/005393

Box No. I

Basis of this opinion

1. With regard to the language, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.
☐ This opinion has been established on the basis of a translation from the original language into the following language
_____, which is the language of a translation furnished for the purposes of international search (under Rule 12.3 and 23.1(b)).
2. With regard to any nucleotide and/or amino acid sequence disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
 - a. type of material
☐ a sequence listing
☐ table(s) related to the sequence listing
 - b. format of material
☐ in written format
☐ in computer readable form
 - c. time of filing/furnishing
☐ contained in the international application as filed.
☐ filed together with the international application in computer readable form.
☐ furnished subsequently to this Authority for the purposes of search.
3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table(s) relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/JP2005/005393

Box No. IV

Lack of unity of invention

1. ☐ In response to the invitation (Form PCT/ISA/206) to pay additional fees the applicant has:
- ☐ paid additional fees
 - ☐ paid additional fees under protest
 - ☐ not paid additional fees
2. ☒ This Authority found that the requirement of unity of invention is not complied with and chose not to invite the applicant to pay additional fees.
3. This Authority considers that the requirement of unity of invention in accordance with Rules 13.1, 13.2 and 13.3 is
- ☐ complied with
 - ☒ not complied with for the following reasons:

The inventions of independent claims 1, 2 and 3 relate to a garment for bioinformation measurement wherein a breast induction electrode section for acquiring the electrocardiographic potential near the breast when a subject wears the garment is arranged, and the garment is formed of a nonconductive material. The inventions of independent claims 7 and 8 relate to an electrocardiogram analyzer, or a computer-readable program for allowing a computer to function as an electrocardiogram analyzer. The inventions of independent claims 15 and 16 relate to an aspiration information analyzer or a computer-readable program for allowing a computer to function as an aspiration information analyzer. The invention of claim 20 relates to an electrocardiogram analyzer control method. The invention of independent claim 21 relates to an aspiration information analyzer control method. There is no technical relationship among these inventions involving one or more of the same or corresponding special technical feature. Consequently, these inventions cannot be considered to be so linked as to form a single general inventive concept.

4. Consequently, this opinion has been established in respect of the following parts of the international application:
- ☒ all parts
 - ☐ the parts relating to claims Nos. _____

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.

PCT/JP2005/005393

Box No. V	Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement		
1. Statement			
Novelty (N)	Claims	1, 4, 6-21	YES
	Claims	2, 3, 5	NO
Inventive step (IS)	Claims	1, 6-9, 14-21	YES
	Claims	2, 3, 4, 5, 10-13	NO
Industrial applicability (IA)	Claims	1-21	YES
	Claims		NO
2. Citations and explanations:			
<p>Document 1: JP 2002-159458 A (Fukuda Denshi Co., Ltd.), 04 June 2002, paragraphs 0029-0034, Figs. 1, 2 (Family: none)</p> <p>Document 2: Microfilm of the specification and drawings annexed to the request of Japanese Utility Model Application No. 123433/1989 (Laid-open No. 139608/1990) (Wacoal Corp.), 21 November 1990, Specification, page 6, line 14 to page 7, line 2, Fig. 1 (Family: none)</p> <p>Document 3: JP 2002-35141 (Yasutake NICCHI), 05 February 2002, paragraphs 0030-0040, Figs. 2-6 (Family: none)</p> <p>Document 4: JP 10-99299 A (Director General, Agency of Industrial Science and Technology), 21 April 1998, paragraphs 0018-0019, Figs. 1, 2 (Family: none)</p> <p>Claim 1</p> <p>Documents 1-3 do not describe a garment for bioinformation measurement wherein, when a subject wears the garment, breast induction electrode sections having length that covers from the body surface near the forth rib to the body surface near the sixth rib are arranged at 6 locations or more, between the position in contact with the vicinity of the front part of the chest bone and the position in contact with the vicinity of the side part of the left chest side of the subject; nor is this obvious to a person skilled in the art.</p> <p>Claims 2, 4, 5</p> <p>Document 1 describes a shirt for bioinformation measurement wherein a breast induction electrode section formed of a conductive material having the length of 8.5 cm in the body length direction of the garment is arranged near the front center part of the garment to near the left hem of the garment. Also, providing the breast induction electrode section at a position from near the front part of the chest bone towards near the side part of the right chest of the subject is described. The inventions described in claim 2 and 5 are disclosed in document 1.</p> <p>Also, although the shirt described in document 1 covers the body surface near the clavicles of the subject, in the garment for bioinformation measurement, providing a four-limb conductive electrode part in addition to the breast induction is described in document 2, and therefore, in the invention described in document 1, further providing the four-limb conductive electrode part could easily be conceived by a person skilled in the art.</p>			

Supplemental Box

In case the space in any of the preceding boxes is not sufficient.

Continuation of: BOX V

Claim 3

Document 3 describes a garment for bioinformation measurement formed of a nonconductive material provided with an electrode for living body near the chest part of a subject. The invention described in claim 3 is disclosed in document 3.

Claims 6-9, 20

Documents 1 through 5 do not describe outputting an electrocardiogram data by comparing the amplitude of a plurality of electric potential information based on electric potentials transmitted from a plurality of breast induction electrode sections, selecting a breast induction electrode section with large amplitude as electric potential information for the basis of electrocardiogram output based on the comparison result, and analyzing the electric potential information of the selected breast induction electrode section; nor is obvious to a person skilled in the art.

Claim 10-13

In document 4, a garment for bioinformation measurement wherein an aspiration information measurement sensor section which comprises a conductive member wherein, in a turned-on state, electric resistance value varies by contraction in accordance with a physical change by aspiration movement of a subject and allows transmission of electric information based on that variation in electric resistance value to an aspiration information analyzer is described. Providing also the aspiration information measurement sensor to the garment for bioinformation measurement described in documents 1 and 3 is obvious to a person skilled in the art.

Claims 14-19, 21

Document 4 does not describe outputting aspiration information data by comparing the amplitude of a plurality of electric information obtained by a plurality of aspiration information measurement sensor sections, selecting an aspiration information measurement sensor section with large amplitude as electric information for the basis of aspiration information output based on the comparison result, and analyzing aspiration information based on the fluctuation cycle of the electric information of the selected aspiration information measurement sensor section; nor is this obvious to a person skilled in the art.

PATENT COOPERATION TREATY

TRANSLATION

From the
INTERNATIONAL SEARCHING AUTHORITY

PCT

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

To:

Date of mailing
(day/month/year)

Applicant's or agent's file reference

165WOa-1

FOR FURTHER ACTION

See paragraph 2 below

International application No.

PCT/JP2005/005393

International filing date (day/month/year)

24.03.2005

Priority date (day/month/year)

24.03.2004

International Patent Classification (IPC) or both national classification and IPC

Applicant

DAINIPPON SUMITOMO PHARMA CO., LTD.

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☒ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

2. **FURTHER ACTION**

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA/JP

Authorized officer

Facsimile No.

Telephone No.

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/JP2005/005393

Box No. 1

Basis of this opinion

1. With regard to the language, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.
☐ This opinion has been established on the basis of a translation from the original language into the following language
_____, which is the language of a translation furnished for the purposes of international search (under Rule 12.3 and 23.1(b)).
2. With regard to any nucleotide and/or amino acid sequence disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
 - a. type of material
☐ a sequence listing
☐ table(s) related to the sequence listing
 - b. format of material
☐ in written format
☐ in computer readable form
 - c. time of filing/furnishing
☐ contained in the international application as filed.
☐ filed together with the international application in computer readable form.
☐ furnished subsequently to this Authority for the purposes of search.
3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table(s) relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/JP2005/005393

Box No. IV Lack of unity of invention

1. ☐ In response to the invitation (Form PCT/ISA/206) to pay additional fees the applicant has:
- ☐ paid additional fees
 - ☐ paid additional fees under protest
 - ☐ not paid additional fees
2. ☒ This Authority found that the requirement of unity of invention is not complied with and chose not to invite the applicant to pay additional fees.
3. This Authority considers that the requirement of unity of invention in accordance with Rules 13.1, 13.2 and 13.3 is
- ☐ complied with
 - ☒ not complied with for the following reasons:

The inventions of independent claims 1, 2 and 3 relate to a garment for bioinformation measurement wherein a breast induction electrode section for acquiring the electrocardiographic potential near the breast when a subject wears the garment is arranged, and the garment is formed of a nonconductive material. The inventions of independent claims 7 and 8 relate to an electrocardiogram analyzer, or a computer-readable program for allowing a computer to function as an electrocardiogram analyzer. The inventions of independent claims 15 and 16 relate to an aspiration information analyzer or a computer-readable program for allowing a computer to function as an aspiration information analyzer. The invention of claim 20 relates to an electrocardiogram analyzer control method. The invention of independent claim 21 relates to an aspiration information analyzer control method. There is no technical relationship among these inventions involving one or more of the same or corresponding special technical feature. Consequently, these inventions cannot be considered to be so linked as to form a single general inventive concept.

4. Consequently, this opinion has been established in respect of the following parts of the international application:
- ☒ all parts
 - ☐ the parts relating to claims Nos. _____

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.

PCT/JP2005/005393

Box No. V	Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement		
1. Statement			
Novelty (N)	Claims	<u>1, 4, 6-21</u>	YES
	Claims	<u>2, 3, 5</u>	NO
Inventive step (IS)	Claims	<u>1, 6-9, 14-21</u>	YES
	Claims	<u>2, 3, 4, 5, 10-13</u>	NO
Industrial applicability (IA)	Claims	<u>1-21</u>	YES
	Claims	<u> </u>	NO
2. Citations and explanations:			
<p>Document 1: JP 2002-159458 A (Fukuda Denshi Co., Ltd.), 04 June 2002, paragraphs 0029-0034, Figs. 1, 2 (Family: none)</p> <p>Document 2: Microfilm of the specification and drawings annexed to the request of Japanese Utility Model Application No. 123433/1989 (Laid-open No. 139608/1990) (Wacoal Corp.), 21 November 1990, Specification, page 6, line 14 to page 7, line 2, Fig. 1 (Family: none)</p> <p>Document 3: JP 2002-35141 (Yasutake NICCHI), 05 February 2002, paragraphs 0030-0040, Figs. 2-6 (Family: none)</p> <p>Document 4: JP 10-99299 A (Director General, Agency of Industrial Science and Technology), 21 April 1998, paragraphs 0018-0019, Figs. 1, 2 (Family: none)</p> <p>Claim 1</p> <p>Documents 1-3 do not describe a garment for bioinformation measurement wherein, when a subject wears the garment, breast induction electrode sections having length that covers from the body surface near the forth rib to the body surface near the sixth rib are arranged at 6 locations or more, between the position in contact with the vicinity of the front part of the chest bone and the position in contact with the vicinity of the side part of the left chest side of the subject; nor is this obvious to a person skilled in the art.</p> <p>Claims 2, 4, 5</p> <p>Document 1 describes a shirt for bioinformation measurement wherein a breast induction electrode section formed of a conductive material having the length of 8.5 cm in the body length direction of the garment is arranged near the front center part of the garment to near the left hem of the garment. Also, providing the breast induction electrode section at a position from near the front part of the chest bone towards near the side part of the right chest of the subject is described. The inventions described in claim 2 and 5 are disclosed in document 1.</p> <p>Also, although the shirt described in document 1 covers the body surface near the clavicles of the subject, in the garment for bioinformation measurement, providing a four-limb conductive electrode part in addition to the breast induction is described in document 2, and therefore, in the invention described in document 1, further providing the four-limb conductive electrode part could easily be conceived by a person skilled in the art.</p>			

Supplemental Box

In case the space in any of the preceding boxes is not sufficient.

Continuation of: Box V

Claim 3

Document 3 describes a garment for bioinformation measurement formed of a nonconductive material provided with an electrode for living body near the chest part of a subject. The invention described in claim 3 is disclosed in document 3.

Claims 6-9, 20

Documents 1 through 5 do not describe outputting an electrocardiogram data by comparing the amplitude of a plurality of electric potential information based on electric potentials transmitted from a plurality of breast induction electrode sections, selecting a breast induction electrode section with large amplitude as electric potential information for the basis of electrocardiogram output based on the comparison result, and analyzing the electric potential information of the selected breast induction electrode section; nor is obvious to a person skilled in the art.

Claim 10-13

In document 4, a garment for bioinformation measurement wherein an aspiration information measurement sensor section which comprises a conductive member wherein, in a turned-on state, electric resistance value varies by contraction in accordance with a physical change by aspiration movement of a subject and allows transmission of electric information based on that variation in electric resistance value to an aspiration information analyzer is described. Providing also the aspiration information measurement sensor to the garment for bioinformation measurement described in documents 1 and 3 is obvious to a person skilled in the art.

Claims 14-19, 21

Document 4 does not describe outputting aspiration information data by comparing the amplitude of a plurality of electric information obtained by a plurality of aspiration information measurement sensor sections, selecting an aspiration information measurement sensor section with large amplitude as electric information for the basis of aspiration information output based on the comparison result, and analyzing aspiration information based on the fluctuation cycle of the electric information of the selected aspiration information measurement sensor section; nor is this obvious to a person skilled in the art.